In the claims:

Please amend the claims as follows:

1. (Amended) A system for use with a horizontal directional drilling machine to monitor the position and orientation of a downhole tool assembly, the system comprising:

a first beacon supported by the downhole tool assembly having at least one orientation sensor and adapted to transmit signals indicative of the position and orientation of the downhole tool assembly;

a second beacon supported by the downhole tool assembly and spatially separated from the first beacon, wherein the second beacon has at least one orientation sensor and is adapted to transmit signals indicative of the position and orientation of the downhole tool assembly; and

a receiving assembly comprising:

an antenna arrangement adapted to detect signals emanating from the first beacon and the second beacon;

a processor supported by the receiving assembly and adapted to receive the detected signals, to process the detected signals, to generate a composite of the relative positions of the receiving assembly, the first beacon, the second beacon, and the downhole tool assembly; and

a display adapted to visually communicate [to] the composite of the relative positions of the receiving assembly, the first beacon, the second beacon, and the downhole tool assembly and the orientation of the downhole tool assembly, the first beacon and of the second beacon.

2. (Amended) A horizontal directional drilling system comprising:

a frame;

a drill string having a first end and a second end;

a rotary drive system attachable to the frame, operatively connectable to the first end of the drill string, and adapted to rotate and advance the drill string;

a downhole tool assembly comprising:

a bearing housing assembly connectable to the second end of the drill string;

~~a first beacon supported by the bearing housing assembly for movement therewith and adapted to transmit signals indicative of the orientation of the bearing housing assembly;~~

a front housing connectable to the bearing housing assembly and rotatable independently of the bearing housing assembly;

a first beacon supported by the front housing for movement therewith and adapted to transmit signals indicative of the orientation of the front housing;

a second beacon assembly supported by the ~~front~~ bearing housing assembly for movement therewith and adapted to transmit signals indicative of the orientation of the ~~front~~ bearing housing assembly; and

a receiving assembly adapted to monitor the orientation of the bearing housing assembly and the front housing, the receiving assembly comprising:

an antenna assembly adapted to detect the signals emanating from both the first beacon and the second beacon and to transmit the detected signals; and

a processor assembly adapted to receive the detected signals from the antenna assembly, to process the detected signals to determine the

orientation of the front housing and the orientation of the bearing housing assembly.

3. (Amended) A downhole tool assembly for use with a rotatable drill string comprising:

a rotatable bearing housing assembly connectable to the second end of the rotatable drill string;

~~a first beacon supported by the bearing housing assembly for movement therewith and adapted to transmit signals indicative of the orientation of the bearing housing assembly;~~

a front housing connectable to the bearing housing assembly and rotatable independently of the bearing housing assembly; ~~and~~

a first beacon supported by the front housing for movement therewith and adapted to transmit signals indicative of the orientation of the front housing; and

a second beacon assembly supported by the ~~front housing~~ bearing housing assembly for movement therewith and adapted to transmit signals indicative of the orientation of the ~~front housing~~ bearing housing assembly.

4. (Amended) A method for drilling a borehole having a desired orientation, using a downhole tool assembly and a receiving assembly, the downhole tool assembly comprising a first beacon and a second beacon both supported by the downhole tool assembly, wherein the first beacon is adapted to transmit a first locating signal and wherein the second beacon is adapted to transmit a second locating signal, the method comprising:

sensing the first locating signal emanating from the first beacon and the second locating signal emanating from the second beacon; and

processing the sensed first and second locating signals to generate a composite of the relative position of the receiving assembly to the first beacon and the second beacon.

5.(Amended) A method for drilling a borehole having a desired pitch using a downhole tool assembly attached to a drill string and a signal receiving assembly, the downhole tool assembly comprising a first beacon adapted to emit a first pitch signal indicative of the pitch orientation of the first beacon and a second beacon spatially separated from the first beacon and adapted to emit a second pitch signal indicative of the pitch orientation of the second beacon, the method comprising:

sensing the first pitch signal and the second pitch signal using the signal receiving assembly;

processing the first pitch signal and the second pitch signal substantially simultaneously to determine the pitch orientation of the first beacon and the pitch orientation of the second beacon; and

comparing the pitch of the first beacon and the pitch of the second beacon to the desired pitch.

6. (New) The system of claim 1 wherein the signals transmitted by the first beacon and the second beacon each comprise an electromagnetic field adapted to communicate position and orientation information.

7. (New) The system of claim 1 wherein the first beacon orientation sensor comprises a pitch sensor adapted to determine the pitch orientation of the first beacon and wherein the second beacon orientation sensor comprises a pitch sensor adapted to determine the pitch orientation of the second beacon.

8. (New) The system of claim 1 wherein the first beacon orientation sensor comprises a roll sensor adapted to determine the roll orientation of the first beacon and wherein the second beacon orientation sensor comprises a roll sensor adapted to determine the roll orientation of the second beacon.

9. (New) The system of claim 1 wherein the antenna arrangement comprises at least two sets of three mutually orthogonal coils.

10. (New) The system of claim 9 wherein each set of coils is separated a known distance from the other.

11. (New) The system of claim 1 wherein the processor is adapted to determine the distance between the receiving assembly and each of the first beacon and the second beacon from the detected signals.

12. (New) The horizontal directional drilling system of claim 2 wherein the signals transmitted by the first beacon and the second beacon each comprise an electromagnetic field adapted to transmit position and orientation information.

13. (New) The horizontal directional drilling system of claim 2 wherein the first beacon orientation sensor comprises a pitch sensor adapted to determine the pitch

orientation of the first beacon and wherein the second beacon orientation sensor comprises a pitch sensor adapted to determine the pitch orientation of the second beacon.

14. (New) The horizontal directional drilling system of claim 2 wherein the first beacon orientation sensor comprises a roll sensor adapted to determine the roll orientation of the first beacon and wherein the second beacon orientation sensor comprises a roll sensor adapted to determine the roll orientation of the second beacon.

15. (New) The horizontal directional drilling system of claim 2 wherein the antenna arrangement comprises at least two sets of three mutually orthogonal coils.

16. (New) The horizontal directional drilling system of claim 15 wherein each set of coils is separated a known distance from the other.

17. (New) The horizontal directional drilling system of claim 2 wherein the processor is adapted to determine the distance between the receiving assembly and each of the first beacon and the second beacon using the detected signals.

18. (New) The horizontal directional drilling system of claim 2 wherein the front housing further comprises a directional drill bit.

19. (New) The horizontal directional drilling system of claim 18 wherein the drill string comprises an outer member and an inner member, wherein the inner member is disposed within the outer member and movable independently of the outer member.

20. (New) The horizontal directional drilling system of claim 19 wherein operation of the directional drill bit is driven by rotation of the inner member of the drill string.

21. (New) The horizontal directional drilling system of claim 18 wherein the downhole tool assembly further comprises a drive member supported by the bearing housing assembly for movement therein independent of the bearing housing assembly, wherein the drive member is adapted to drive operation of the directional drill bit in response to rotation of the drill string.

22. (New) The horizontal directional drilling system of claim 21 wherein the drill string comprises an outer member and an inner member, wherein the inner member is disposed within the outer member and operatively connected to the drive member so that rotation of the inner member drives operation of the drill bit.

23. (New) The horizontal directional drilling system of claim 2 wherein the bearing housing comprises at least one borehole engaging member adapted to substantially limit rotation of the bearing housing when the front housing is rotated.

24. (New) The horizontal directional drilling system of claim 23 wherein the borehole engaging member comprises a rolling cutter stabilizer.

25. (New) The horizontal directional drilling system of claim 23 wherein the bearing housing comprises an exterior surface and wherein the borehole engaging member comprises a plurality of ribs formed on the exterior surface of the bearing housing to substantially limit rotation of the bearing housing.

26. (New) The horizontal directional drilling system of claim 2 further comprising a control for operating the rotary drive system and wherein the receiving assembly further comprises a transmitter for communicating information to the control.

27. (New) The downhole tool assembly of claim 3 wherein the signals transmitted by the first beacon and the second beacon each comprise an electromagnetic field.

28. (New) The downhole tool assembly of claim 3 wherein the first beacon orientation sensor comprises a pitch sensor adapted to determine the pitch orientation of the front housing and wherein the second beacon orientation sensor comprises a pitch sensor adapted to determine the pitch orientation of the bearing housing assembly.

29. (New) The downhole tool assembly of claim 3 wherein the first beacon orientation sensor comprises a roll sensor adapted to determine the roll orientation of the front housing and wherein the second beacon orientation sensor comprises a roll sensor adapted to determine the roll orientation of the bearing housing assembly.

30. (New) The downhole tool assembly of claim 3 wherein the downhole tool assembly further comprises a drive member supported by the bearing housing assembly for movement therein independent of the bearing housing assembly.

31. (New) The downhole tool assembly of claim 30 wherein the front housing further comprises a directional drill bit operatively connected to the drive member.

32. (New) The downhole tool assembly of claim 3 wherein the bearing housing assembly comprises at least one borehole engaging member adapted to substantially limit rotation of the bearing housing when the front housing is rotated.

33. (New) The downhole tool assembly of claim 32 wherein the borehole engaging member comprises a rolling cutter stabilizer.

34. (New) The downhole tool assembly of claim 3 wherein the bearing housing assembly further comprises a clutching assembly used to selectively position the rotational orientation of the bearing housing.

35. (New) The method of claim 4, wherein the first beacon comprises an orientation sensor, the method further comprising sensing the orientation of the first beacon.

36. (New) The method of claim 35, wherein the second beacon comprises an orientation sensor, the method further comprising:

sensing the orientation of the second beacon;

comparing the orientation of the first beacon to the desired orientation of the borehole;

comparing the orientation of the second beacon to the desired orientation of the borehole; and

redirecting the downhole tool assembly so that the orientation of both the first and second beacons are substantially similar to the desired orientation of the borehole.

37. (New) The method of claim 5, wherein the downhole tool assembly comprises a directional drill bit, the method further comprising:

axially advancing the directional drill bit; and

selectively rotating the directional drill bit using the drill string for a period of axial advance.

38. (New) The method of claim 5, wherein the drill string comprises a plurality of connectable pipe sections, each pipe section having an inner member disposed longitudinally within a hollow outer member, each outer member being connectable to another one of the outer members comprising the plurality of pipe sections and each inner member being connectable to another one of the inner members comprising the plurality of pipe sections, and wherein the plurality of inner members are rotatable independently of the outer members, the method further comprising:

changing the orientation of the first beacon with the interconnected inner members.

39. (New) The method of claim 38 further comprising changing the orientation of the second beacon with the interconnected outer members.

40. (New) The method of claim 38, wherein the downhole tool assembly comprises a directional drill bit, the method further comprising:

axially advancing the directional drill bit; and

selectively rotating the directional drill bit using the interconnected inner members of the drill string.